CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Specifications and Advertisement for Bids for 12KV Padmounted Switchgear

MEETING DATE: August 7, 1996

SUBMITTED BY: Electric Utility Director

RECOMMENDED ACTION: That the City Council approve the specifications and authorize advertisement for bids for the purchase of seven (7) 12KV padmounted switchgear units.

BACKGROUND: The Electric Utility Department's Engineering Division has requested that seven (7) 12KV padmounted switchgear units be purchased to provide electric energy to new housing developments such as Towne Ranch and Century Meadows, and provide inventory back-up for emergency replacements due to failure and for replacement of existing units which are no longer repairable.

This switchgear is utilized throughout the City's underground distribution system to provide load transfer capabilities, system protection and failure isolation.

FUNDING: The estimated cost of this purchase is $84,000. Funding is available in the Electric Utility Department's Operating Fund.

BID OPENING: August 28, 1996

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Electric Utility Director

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ANV/MG/sh

cc: Purchasing Officer
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APPROVED

H. Dixon Flynn
CITY MANAGER

CITY OF LODI - ELECTRIC UTILITY DEPARTMENT

EQUIPMENT SPECIFICATIONS

PADMOUNT SWITCHGEAR AIR OR OIL INSULATED

A. GENERAL:

This specificatin covers the electrical and mechanical features of padmounted switchgear to be used in the City of Lodi's 12,000 volt primary distribution system. This document shall be limited to 15KV class, 200A and 600A, three phase, dead front, fused and unfused, air or liquid insulated padmount switchgear.

It is the intent of these specifications to describe equipment of the best design and construction for the service for which it is intended. Consequently, it shall be the City's desire to award contracts to the bidder who has demonstrated high quality by having a considerable number of switches of the manufacturer in service on lines of electric utilities over a period of years.

B. TESTS:

The switchgear shall pass design test and production test per latest revisions of applicable American National Standards Institute (ANSI) standards.

In addition all switchgear must pass the following production tests:

1. Continuity test to verify all internal connections.
2. Hi-Pot Test to determine dielectric strength of unit.

Liquid insulated units:

3. Pressure Test Tank
4. Oil shall be tested for dielectric strength and contamination after the production tests. The dielectric strength tested per ASTM-D-877 shall be greater than 35KV. The visual condition tested per ASTM-D-1542 shall be clear with no sediment. The insulating oil shall be certified to contain no Polychlorinated Biphenyls (PCB's).

C. GUARANTEE:

The manufacturer shall guarantee all equipment delivered under these specifications against any and all defects in material and/or workmanship for a period of at least one year from date of acceptance. The manufacturer shall rectify all such defects by repair or replacement at his own expense and assume responsibility for associated shipping costs.

D. RATINGS & DESIGN:

The following shall be met:

1. Electrical Ratings:

Nominal Voltage:	14.4KV phase to phase 8.3KV phase to gnd.
Minimum Insulation Level:	95KV BIL
Continuous Current:	600AMP Switch sections 600AMP Isolation Switch 200AMP Fuse section (s)
Minimum Load Switching:	600A
Minimum Short Circuit Current:	12000A RMS, Sym. 19000A RMS, Asym.

2. Design:

Dead front, three phase, air or liquid insulated equipped with windows to visually verify switch or disconnect contact position.

The switchgear configuration shall be as specified on the proposal form (s).

3. Bushings:

All 600A rated sections shall be equipped with 600A dead front bushings.

All 200A sections shall be equipped with universal bushing wells.

4. Fusing:

The fused taps shall be equipped with power fuses. Complete fuse assemblies including fuse links, as specified on the proposal form (s), shall be provided.

5. Visible disconnects and Viewing Windows:

Air insulated main feeder switches do not require a disconnect (isolation) switch. Each main feeder switch shall have a viewing window to visually inspect the switch contacts and to establish a visible open.

D. RATES & DESIGN:(cont.)

Liquid (oil) insulated vacuum switches shall be supplied with a 3 phase gang operated isolation switch and viewing window. The isolation switch shall be in series with the vacuum contacts and be group (gang) operated. The isolation switches shall have a viewing window to visually inspect the switch contacts and to establish a visible open

6. Enclosure:

The enclosure integrity shall meet requirements of the latest ANSI standards and Western Underground Guide (s).

One loadbreak type parking stand shall be provided for each termination. The parking stands are to be located adjacent to each termination.

The switchgear shall be equipped with a minimum of 3/8" diameter round copper ground bus (one in each compartment) for grounding. The ground bus shall be located in a minimum 9" and not more than 12" from the bottom of the switch and extend full width of the compartment.

All switches to be group (gang) operated

All switch handles shall be located within the front/rear cable terminating compartment and shall be operatable with a safety eight foot insulating switch stick.

Side mounted switch operating handles will not be accepted.

Operating handles shall clearly labeled.

The isolation switch shall be interlocked with the vacuum switch such that the isolation switch can not be opened until the vacuum switch is opened.

6a. Nameplate:

The switchgear shall be equipped with stainless steel or anodized aluminum nameplate (s). The nameplate (s) to be located on the switch wall one in each compartment.

The nameplate (s) shall have the following information stamped or engraved:

* Name of manufacturer
* Date of manufacturer
* Serial number
* Model or style number
* Rated voltage
* Rated impulse withstand voltage (BIL)

D. RATES & DESIGN (cont.):

* Rated continuous current
* Rated load interrupting current
* Rated short current (Sym. and Asym.)
* Total weight
* Schematic diagram
* PCB Content in PPM

Note: **The schematic diagram may be a separate plate located adjacent to the nameplate and made of the same material as the nameplate.**

The nameplate and schematic diagram to be securely attached to the switch.

6b. Dimensions: Over all dimensions shall not exceed the following:

80" WIDTH X 70" DEPTH X 50" HEIGHT

6c. Locking Provisions:

Cabinets:

Each cabinet shall have three point latching, a locking provision and one pentahead bolt. The bolt shall be coordinated with the latch and padlock to prevent unlatching and insertion of the padlock into the hasp when and until the bolthead is completely seated.

Hoods:

Two locking provisions shall be provided with each hood. Each locking provision shall consist of a pentahead bolt and shall be coordinated with the padlock to prevent insertion of the padlock into the hasp when and until the bolthead is completely seated.

6d. Paint:

All exterior surfaces shall be painted Munsell 7GY3.29/1.5 (olive) green or approved equal, using a system of coordinated and thoroughly tested materials and application techniques that will assure long life. Special attention shall be given to welds, seams, edges and rough spots.

6e. Lifting Provisions:

Lifting provisions shall be provided and located in such a way to avoid interference between lifting slings and any attachments on the switchgear and to avoid scratching the finish.

6f. Compartment Depth:

A minimum clearance of 20" shall be maintained between the door and the 600A bushing mounting surface to accommodate a 200A elbow piggyback connected to a 600A T-connector.

D. RATES & DESIGN (cont.):

6f. Compartment Depth:

A minimum clearance of 20" shall be maintained between the door and the 600A bushing mounting surface to accommodate a 200A elbow piggyback connected to a 600A T-connector.

A minimum clearance of 18" shall be maintained between the door and the 200AMP bushing well mounting surface.

6g. Fuse Replacement:

A suitable interlock shall be provided which prevents removing the fuse prior to parking the respective 200A elbow.

E. ADDITIONAL FEATURES

The following items shall be provided with the switchgear:

Oil Insulated

A. Oil fill and drain plug with gate valve to isolate fill/drain plug from tank.

B. Sight gauge for oil level indication.

C. Hotstick operable automatic pressure relief valves for both main and tap side of switchgear.

D. Oil drip tray for each fuse.

Oil & Air Insulated

A. Maintenance and installation instruction manuals 2 sets to be provided with each switch. The manual shall be divided and tabbed as follows:
-maintenance
-installation
-factory tests

B. Each busing, fuse and switch position shall be labeled.

C. Factory test results to be included in each of the 2 sets of the maintenance and installation manuals.